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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,060	06/01/2001	Stanton M. Keeler	M-11585 US	2297

7590 09/04/2003

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EXAMINER	
TORRES, JOSEPH D	
ART UNIT	**PAPER NUMBER**
2133	9

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/872,060	KEELER, STANTON M.	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuji, Fumio et al. (US 6332206 B1, hereafter referred to as Nakatsuji).

35 U.S.C. 103(a) rejection of claim 1.

Nakatsuji teaches a data storage disk having an error correction code ECC block (Figure 1 in Nakatsuji is an error correction code ECC block) stored on said disk (see Optical Disc I/F 12 in Figure 5 of Nakatsuji), said ECC block comprising: an array of n2 rows and n1 columns of bytes (col. 1, lines 29-47, Nakatsuji), each row including m1

bytes of inner parity and each column including m2 bytes of outer parity (see Figure 1 and col. 1, lines 29-47 in Nakatsuji).

However Nakatsuji, does not explicitly teach the specific use of an ECC block of 104 rows and 182 columns of bytes, each row including ten bytes of inner parity and each column including sixteen bytes of outer parity.

Note: if the values n1, n2, m1 and m2 in Nakatsuji are selected such that n1=182, n2=104, m1=10 and m2=16, then the array of Figure 1 in Nakatsuji comprises an array of n2=104 rows and n1=182 columns of bytes, each row including m1=10 bytes of inner parity and each column including m2=16 bytes of outer parity. The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to select specific values for n1, n2, m1 and m2 in Nakatsuji based on obvious engineering design choices to ensure adequate error correction capabilities and to ensure that the ECC block complies with standards that dictate the make-up of transport frames and storage sectors for an optical disk.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nakatsuji by including an additional step of selecting n1, n2, m1 and m2 in Nakatsuji such that n1=182, n2=104, m1=10 and m2=16. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that selecting n1, n2, m1 and m2 in Nakatsuji such that n1=182, n2=104, m1=10 and m2=16 would have provided the opportunity to ensure adequate error

correction capabilities and to ensure that the ECC block complies with standards that dictate the make-up of transport frames and storage sectors for an optical disk.

35 U.S.C. 103(a) rejection of claim 2.

Col. 1, lines 29-47 in Nakatsuji teaches that the codewords in Nakatsuji are Reed-Solomon codewords.

35 U.S.C. 103(a) rejection of claim 6.

A first surface media is still a storage disk, for which the teachings in Nakatsuji and ECMA-279 are designed.

2. Claims 3-5 and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuji, Fumio et al. (US 6332206 B1, hereafter referred to as Nakatsuji) in view of ECMA-279 (ECMA-279 standard for DVD-Recordable Disks, November 1998).

35 U.S.C. 103(a) rejection of claim 3.

Nakatsuji, substantially teaches the claimed invention described in claims 1 and 2 (as rejected above).

However Nakatsuji, does not explicitly teach the specific use of dividing an ECC array into eight sectors, each sector having thirteen rows.

ECMA-279, in an analogous art, teaches that a sector consists of 13 rows with n1=182 columns of bytes, each row including m1=10 bytes of inner parity. Since 104 divides

13, it is obvious that the ECC block introduced and discussed in the rejection to claim 1 must be stored in 8 sectors of the recording medium taught in ECMA-279 (see Figure 26 on page 30 of ECMA-279).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nakatsuji by including an additional step of dividing an ECC array into eight sectors, each sector having thirteen rows. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that dividing an ECC array into eight sectors, each sector having thirteen rows would have provided the opportunity to store the ECC block introduced and discussed in the rejection to claim 1 in 8 sectors of the recording medium taught in ECMA-279 (see Figure 26 on page 30 of ECMA-279).

35 U.S.C. 103(a) rejection of claim 4.

See rejection to claims 1 and 3, above. Note: additional parity generated must be stored in rows allocated for data in order to remain ECMA-279 compliant.

35 U.S.C. 103(a) rejection of claim 5.

ECMA-279 teaches each sector comprises: a four byte identification data (ID) field (see Figure 21 on page 26 of ECMA-279); a two byte ID error detection code field (see Figure 21 on page 26 of ECMA-279); a four byte error detection code field (see Figure 21 on page 26 of ECMA-279); a six byte copyright management information field (Note:

copyright management information is system information) and a 1880 byte user data field (Note: using the data field to store additional ECC information would reduce data storage, see rejection to claims 1, 3 and 4, above).

35 U.S.C. 103(a) rejection of claim 7.

See rejection to claims 1, 3 and 4, above.

35 U.S.C. 103(a) rejection of claim 8.

Claim 8 cites substantially cites the same language as claim 5, rejected above.

35 U.S.C. 103(a) rejection of claim 9.

Claim 8 cites substantially cites the same language as claim 4, rejected above.

35 U.S.C. 103(a) rejection of claim 10.

Page 30 of ECMA-279 teaches that data frames are interleaved.

35 U.S.C. 103(a) rejection of claim 11.

Claim 11 cites substantially cites the same language as claims 3 and 4, rejected above.

See rejection to claims 3 and 4, above.

35 U.S.C. 103(a) rejection of claim 12.

See rejection to claim 1 and 3, above.

35 U.S.C. 103(a) rejection of claims 13 and 14.

Claims 13 and 14 cites substantially cites the same language as claim 5, rejected above.

35 U.S.C. 103(a) rejection of claim 15.

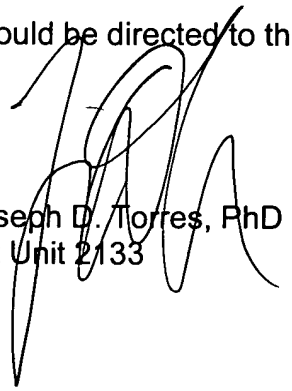
A first surface media is still a storage disk, for which the teachings in Nakatsuji and ECMA-279 are designed.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Han, Gyoo-wan (US 6378103 B1) teaches an apparatus and method for error-correction-decoding in an optical disk reproduction system. Brown, Chris T. et al. (US 6321351 B1) teaches a method and apparatus for presenting DVD media read error data. Demura, Masayuki et al. (US 6357030 B1) teaches an encoding method of data for devices such as DVDs which have an ECC block format with a linear code ECC code such as a Reed-Solomon code. Zook, Christopher P. (US 5991911 A) teaches generating CRC validation syndromes concurrent with generating ECC error syndromes of a Reed-Solomon code during the vertical and horiztonal passes over a DVD product code. Zook, Christopher P. et al. (US 5974580 A) teaches a method and apparatus for generating the syndromes for the codewords of a multi-dimensional code. Yamawaki, Hirofumi et al. (US 6158038 A) teaches a method and apparatus for

correcting errors in data recorded on a recording medium. Tanaka, Shin-ichi et al. (US 5978958 A) teaches a recording medium each having a data structure of error correcting code, a data structure for use in a recording medium and a method for arranging a parity of an error correction code. Shigenobu, Masahiro et al. (US 5917792 A) teaches a recording medium playback device and recording medium playback method for playing back a recording medium on which recorded data is divided into frames of predetermined length and sync patterns are inserted between the frames. Kojima, Tadashi et al. (US 6182263 B1) teaches a method of processing data for generating an error correcting product code block devised so as not to change the level of redundancy after the error correcting ability is modified.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-746-7240.



Joseph D. Torres, PhD
Art Unit 2133